

before withdrawing the needle after sufficient fluid has been injected.

Insert into the rectum a suppository of ichthyol 5 m. Have the patient insert one of the suppositories after the morning stool and on retiring at night. Inject only one pile at a treatment and make treatments from three to seven days apart; also see that the patient's bowels move every day. From three to twelve injections usually result in a radical cure.

The only objection I have found to this method of treatment is the length of time necessary to cure. But on the other hand, the patient is not detained from business, does not suffer the pain which always follows all other methods, and to his mind is not subjected to an operation, which is quite a factor with him. Neither have I ever met any unpleasant complications or sequela; I attribute this to the preliminary divulsion, proper attention to antiseptics and the use of a strong solution of the acid, at least, fifty per cent; were I to change my solution at all I would use a stronger rather than a weaker one.

REPORTS OF FOCAL-OPERATIONS IN HIP-JOINT TUBERCULOSIS—A DISCUSSION FINISHED.*

By HARRY M. SHERMAN, A. M., M. D., San Francisco.

When Dr. Huntington read his paper before this Society, describing and discussing his three operations of tunneling the neck of the femur to reach a tuberculous focus in the femoral neck or head, all of which had been successful, I was invited to open the discussion.

There was more to say than I could get into the allotted five minutes, and I used the time in discussing the term "hip-joint disease" and the questions of the pathology of the cases reported. I expressed the opinion that the term "hip-joint disease" always had meant and did still mean "tuberculosis of the hip-joint"—that other forms of chronic infection or inflammation of the hip-joint had distinctive titles, as osteoarthritis, arthritis deformans, senile coxitis and so on;—in brief, that when one said that a child had hip-joint disease one always thought of that child as having hip-joint tuberculosis. This idea chanced to be at variance with Dr. Huntington's concept and did not agree with Lovett's concept, but it is, I still think, the proper idea to hold.

As regards the pathology, I held that the first two of Dr. Huntington's cases were not cases of tuberculosis, either in their onset, clinical histories or end results, and the third case was, quite surely, also not tuberculosis, even though it had been considered such by those in attendance on it, for the end result was not in keeping with the tuberculosis idea. I have read the paper since it has been published and am still of the same opinion as regards these cases.

In that discussion I had gotten to the point of

citing some cases of my own of this same operation, when I was notified that I had used up all my time and I had to stop. It would have been better if I had been able to present this paper shortly after that meeting, when the matter was fresh in the minds of all present, but I could not write it immediately and since April we have all been doing that which we had to do, not necessarily that which we wanted to do. But my interest in the subject is too great to permit me to let it rest where it now is without finishing my report, and that is why I open it again tonight.

I do not believe that there has ever been a surgeon who had to treat few or many patients suffering with skeletal or joint tuberculosis who did not search for a radical plan of procedure, some way to shorten the treatment and lessen the destructive action of the infection. I have been constantly caring for these patients ever since I was graduated in medicine in 1880; but it was not until about 1891 or 1892 that I had the case presented that gave me the first opportunity to do the identical operation that Dr. Huntington spoke of. Now, I was not the originator of the operation, in general, nor in particular. Macnamara's case I knew of, and also Poore's series, and I called Dr. Huntington's attention to the writings of both of these men.

However, in 1891 or 1892, a little girl was brought to me with a very painful hip, and I made a clinical diagnosis of tuberculous osteitis in the head or neck of the femur. The child had been limping for about a year, but three months before coming to me an acute stage had supervened and she had suffered much. No apparatus that I could put on her had any effect toward lessening her pain, and so I sent her to the hospital and trephined the neck of the femur to endeavor to reach and remove the infected bone, with the definite idea of removing the disease. If I failed to do this I was confident I could at least relieve tension and stop the pain which was the paramount symptom of the case. I failed to find a definite focus of tuberculosis. I did stop the pain, but that was all; for the child, after a brief period of improvement, suffered a relapse and I was obliged to do a resection of the hip, in doing which I found the joint affected and full of pus and a perforation in the floor of the acetabulum with a small abscess inside the pelvis. The probability is that there were even more tuberculous lesions deeper yet, for the child died the night after the last operation.

The clinical symptoms had led me to exclude invasion of the articulation, for the range of permitted motion, even in the face of the pain, was greater than one could associate with the idea of a synovial and articular tuberculosis; and yet the operation of excision showed that my estimate had been wrong, the joint had been infected and that the case had been not at all suitable for the focal operation. The full history of this child was in my office at the time it was burned, and I am now writing up the case from notes that I had made for

*Read before the San Francisco County Medical Society.

the purpose of the discussion of Dr. Huntington's paper.

There was another girl at about that time, twelve or thirteen years old, who had had a slowly progressive tuberculosis of the femoral head or neck. Treatment by apparatus accomplished nothing, and so, as I thought I could here also exclude articular invasion, I submitted her to the same focal operation. The operation was done in September, 1892, about fourteen years ago. The head and neck of the femur were both excavated, leaving only the cortex of the neck and the cortex and cartilage of the head. The wound filled with flabby granulations, but would not heal. In August, 1893, I scraped it all out again, and again in the following month, and still again in February, 1894. After that the wound healed, and in August, 1894, she was beginning to develop motion in the joint; in November, 1894, she began to use the limb some, and I made a note in her history "apparently well." This girl's history, too, was burned in my office, and I am now again quoting notes made from it for the purpose of the discussion which I never finished.

The joint remained well for a year and then the wound reopened; in November, 1895, I again curetted the tuberculous tissue from the sinus, but the wound would not close and in February, 1896, I excised the joint, which had become infected, and found perforation of the acetabulum and an intrapelvic abscess. The girl—by then almost a young woman—very gradually recovered, but the intrapelvic abscess opened into the rectum in spite of having outside drainage, and about a year ago I met her in the cars and she told me that she still had a sinus leading from the hip-excision scar into the rectum, though otherwise she was well. This, you can see, was real tuberculosis.

These two cases showed me very plainly that only the exceptional case of hip-joint tuberculosis would be amenable to a focal operation, and I set about the task of finding one. I ask you to believe that not a single new patient with hip-joint tuberculosis came to me without my thinking of this possibility, and after I had provided myself with an X-ray apparatus, all of this class of patients were radiographed with the very object in view of settling this particular question.

In February, 1904, after Dr. Huntington's first case, and after I had seen it and talked it over with him, a little girl, three or four years old, was led, hip-limping, into the office. She had a fair range of motion in the affected hip, more than I could associate with an intra-articular lesion, and the radiogram showed a definite light spot in the shadow of the neck, in the diaphysis, and extraepiphyseal. I asked Dr. Huntington to see this child, and he agreed with me that it was a suitable case for the focal operation. He was present when I operated. Now, I believe this operation should be done in the plainest possible view of the operator, and so I wore an electric head-light and cut away, with a long-handled small curette, only such bone as I had seen

or was able to see and to judge its texture. Of course, this meant intermittent sponging and operating, but it can be done with a little patience. Up close to the femoral head I saw that I had opened into an abscess. It occupied exactly the place in the neck indicated by the dark spot on the radiogram. I cleaned out the tuberculous detritus and, exploring deeper, found that the abscess had perforated the cortex, invaded the joint, had even perforated the capsule, and made a little extracapsular collection in front of the joint. I cleaned this all out, swabbed it with carbolic acid and alcohol, washed these out with salt solution, and sutured the periosteum, deep and superficial fascia and the skin, *leaving the cavity in the bone full of the salt solution*. The leg was then put in a plaster-of-paris spica.

The wound healed and has remained healed; the abscess refilled and then receded; the case has followed just the course it would have had I not touched the child with knife, trephine or curette.

A report from the pathologist of the Children's Hospital, Dr. Rachel Ash, told me that a guinea pig injected in the peritoneum with the pus from the abscess of this child, developed tuberculosis of the peritoneum, mesenteric glands, liver and spleen. The child is doing very well but is still in a plaster-of-paris spica, and does not use the affected limb. This, too, is a case of real tuberculosis and I am again quoting notes made from the clinical history, which was burned in my office.

Still later, in the present year and since the paper and discussion before this Society, a little girl was sent me by Dr. Charles A. Clinton of this city, who had the ordinary clinical symptoms of a beginning hip-joint tuberculosis and whose radiogram showed thinning of the bone in the upper part of the neck near the head. On the same argument, based on the same facts, she was subjected to the same operation. On perforating the cortex I found the cancellous tissue of the *distal* part of the neck very soft and easily removed. As I got deeper, the bone got denser and harder, and so I stopped before I reached the epiphyseal cartilage. *I filled the cavity with salt solution* and sutured the periosteum, fascia and skin and put the limb in a plaster-of-paris spica. The wound healed well and the child was sent home after a fortnight in the hospital. Within a week or ten days she developed a fever and then had symptoms of intra-abdominal infection. These were so prominent that, although my belief was that her condition was "la grippe" with a pneumonic infection, I could not ignore the abdominal evidence and so a brief exploration was made which showed an intact peritoneum and intestine. The symptoms persisted and the child died. I was permitted to examine my hip operation wound. It had healed. The cavity in the bone was filled with firm fibrous tissue; the bone showed no foci other than the one I had removed, in the base of the neck. The articulation was intact.

The report from the pathologist at the Children's Hospital, Dr. Rachel Ash, showed that guinea pigs,

injected with an emulsion made from the rarified and congested cancellous tissue removed by me, developed tuberculosis as the others had done. This, too, was a real tuberculosis, but this child should have recovered, so far as her hip was concerned, and I imagine she would have done so had she not developed the pneumonia, with the abdominal symptoms, in the course of her "grippe." The pathological specimen of this case was burned in my office.

Later yet, since the fire, a boy was sent to me from a neighboring State with a hip-joint tuberculosis of but brief duration. The pain-symptoms had developed but a fortnight before he came to me, and up to within a short time of their development he had been an active schoolboy with much more play than study in him. Here again the amount of motion permitted was incompatible with the idea of an intra-articular lesion, and pressure over the joint and femoral head gave no pain, while pressure over the base of the neck and trochanter caused outcry. On the other hand, the radiogram showed broken and ragged shadows of the head and the acetabulum. In this predicament I decided to do an arthrotomy and if I found the joint intact to close it and at once do a focal operation in the neck. The arthrotomy disclosed a tuberculous panarthrititis, to my bitter disappointment. I washed out the debris, closed the wound anatomically, put him in a plaster-of-paris spica and sent him home to his local surgeon.

No pathological examination of the tissue from this joint was made, for the cheesy pus, the flabby, pale, edematous granulations and the exfoliated articular cartilage told their own story.

During these fourteen years since my first operation, I have done a good number of early operations on tuberculous foci, when I could locate them, and with varying success. I have found but three cases in which I could consistently see my way to attack a focus in the femoral head and neck, and during that time I have seen probably as much of this form of tuberculosis as any other man in this city. Of these three, but one could have been benefited by the operation, and an evil fate robbed her of the benefit.

In each one of these cases, except the one with possibilities, I operated too late to save the articulation; in cases one and three of tonight's series the joint was quite surely infected before I operated. In case two, the joint was probably intact at the time of the first operation, but after healing of the bone wound there was recrudescence of the tuberculosis, the wound reopened and later perforated into the joint. Here the tuberculosis was so disseminated through the osseous tissue of the head and neck that I quite surely left some of it behind, in spite of my efforts to remove it all. I feel confident that all will agree that, to give any chance of success, this operation must be done before perforation of the cortex or cartilage, and that all tuberculous tissue must be removed. If the latter is not accomplished recrudescence, or perhaps even continuation of the process without having been interrupted at all by

the operation, is most likely. An early diagnosis will, perhaps, enable one to anticipate perforation into the joint; nothing but extensive removal of the walls of the abscess or of the bone around the focus will insure the practically complete removal of the infected tissue. In fact, I believe that the removal of tuberculous tissue in toto, without an actual infection of the new wound, is but very rarely accomplished.

Naturally, I have tried to formulate, in my own mind, the symptom-complex which would indicate the suitable case and exclude the unsuitable ones. You have noticed that I have assumed that a certain freedom of motion in the joint might be taken as excluding invasion of the articulation itself. In four of these reported cases I was in error on this point. In one case, the last reported, a joint which inspection by an arthrotomy showed to be the seat of a tuberculous panarthrititis, permitted an amount of motion which, according to my concept of the conditions and their effects, should have been impossible. In another—the third reported—the child walked into my office, the joint permitted considerable easy and painless motion, and yet at that very time, as was disclosed by the findings at the operation, there was a perforation of the cortex, the intraosseous abscess communicated with the joint cavity, and there was a tuberculous synovitis and a perforated capsule with an extra-articular collection of tuberculous pus. Very evidently my idea of the amount of motion some of these infected joints should permit, is a wrong one and must be revised.

So far as I can see, the revision must be done by the X-ray. Now, the X-ray itself, in children of the usual hip-joint tuberculosis age, is misleading; for the femoral head is often represented, in the radiogram, by an isolated, ossific nucleus, and there is quite a gap between it and the ossified part of the diaphysis which constitutes the neck. It is only in children in whom the processes of ossification have gone much further, that the radiogram can be of use. In these I believe that a broken, wavy, irregular outline of the shadow of the femoral head, or of the acetabulum, indicates articular implication and excludes the possibility of help by an operation directed against an intraosseous lesion. If the shadow of these parts is clear, clean-cut, as on the intact side; if the other elements of the symptom-complex are a limp and a little swelling, or thickening and edema of the panniculus adiposus, fairly definite trochanteric tenderness, but no tenderness over the joint or femoral head, irregular and not severe pain, and an ample range of passive motion, I believe the possibility of help from an operation directed against the focus should be very carefully considered and discussed. But this must always be done with one thought kept clearly in mind;—a tuberculous bone lesion is practically always more serious and more extensive than the outside evidences lead one to believe; it is certain to be so if the observer is an optimist; it may be that it will be most clearly diagnosed by the pessimist; and the

man who is neither optimist nor pessimist must study his cases very closely and reason very accurately to get an approximately clear idea of the real condition.

One word more. I first did the particular operation under discussion tonight, fourteen or fifteen years ago. I have been looking all that time for cases suitable for the operation. I have found five such and on doing the operation on these patients, but one showed that it could have been a success. There is very little credit for me in all this; I can only claim the credit of being persistent, for I am still looking for the suitable case.

DEMONSTRATION OF A PATIENT SHOWING THE EFFECT OF THE X- RAY ON THE EPITHELIAL STRUC- TURES OF THE SKIN.*

By DOUGLASS W. MONTGOMERY, M. D., San Francisco.

The patient, a man seventy-seven years of age, first consulted me about four years ago. He then suffered from a group of symptoms that has received the name of epitheliomatosis. These symptoms were particularly marked on the right side of the face, in front of the right ear and extending down on the neck. The whole surface in this region was crumbly, and there were numerous senile patches, which in two instances had developed into well-marked epitheliomas. These epitheliomas were treated with arsenic paste that caused an intense reaction; in addition, the whole side of the face was exposed to the X-ray for about fifteen sittings. I suppose it was a medium tube, placed at eight or nine inches from the surface, and gradually approached, during the last sittings, to four or five inches. This is all from memory, as the notes were lost in the fire. I remember, however, that a distinct reaction was got from the X-ray.

The patient called on me again December 11, 1906, suffering from senile patches of the nose, of the back of the hands, and of the left side of the face. In one situation, near the left angle of the jaw, an epithelioma had developed. This was cut out. Some of the senile patches are being treated with trichloroacetic acid, and the left side of the face, the nose and the back of the hands are being exposed to the X-ray.

The point of great interest, however, is the condition of the right side of the face, where the epitheliomatosis was so developed four years ago, and which was then exposed to the X-ray.

The scars at the site of the former cancers are white, souple, and in every way of good character. The skin of the right side of the face and of the ear-shell has the yellow color incident to age, but it is smooth, pliable, and absolutely devoid of crusts, whereas it was before covered with crumbly crusts and senile patches, and presented the characteristic appearance of epitheliomatosis.

After the X-raying of four years ago, the hair fell out of the scalp adjacent to the right ear, and

also out of the beard of the right side of the face. The hair of the scalp has partially grown in, but that of the right side of the face has not returned; not even as downy hair. The bald skin is not atrophic, and looks much better, from a cosmetic point of view, than the skin of the rest of the face. A curious circumstance is its freedom from wrinkles, giving it the appearance of a retouched photograph.

It is interesting to note here the inhibitory effect the X-ray has permanently exercised on the hyperactivity that constituted the disease of the epithelial structures, both sebaceous and stratified, of this region. In the first place, it definitely stopped the growth of hair, which is an epithelial structure. Of course, the growth of hair is not so vigorous in old age as it is in youth, but this man had a good growth of beard, and the result can therefore be taken as of some value in indicating what can be done with the X-ray as a depilatory.

Then, again, the action of the X-ray on the sebaceous glands has been eminently satisfactory, as it seems to have stopped short at a point that allowed them still to secrete enough oil to render the surface normally unctuous. It may be, however, that the normal unctuousness of the skin in this case is not owing to secretion from the sebaceous glands at all, but from the sweat glands, which we know also secrete oil.

THE TREATMENT OF PYELITIS AND URETERITIS BY URETHRAL CATHE- TERIZATION AND LAVAGE.*

By GEORGE L. EATON, M. D., San Francisco.

It is with great pleasure that I bring before you this evening a subject that is greatly neglected, and even condemned by many, namely, the treatment of pyelitis and ureteritis by mechanical measures. For simplicity, I wish first to present for your consideration the etiology of pyelitis, and then take up the microscopical examination of the urine of the patients while under treatment. In reference to the etiology, we are confronted by two separate conditions; constitutional and local infection, and constitutional changes. I refer to cardiac, vascular and nervous, embodying the infectious diseases; namely, malaria, smallpox, septicemia, scarlet fever, diphtheria, syphilis, pneumonia, meningitis, etc.

The local infections are those of the kidney that follow infections of the genito-urinary organs, and are classed as ascending infection. The bladder, prostate gland, seminal vesicles, ureter, endometrium, vagina and rectum, when infected, are capable of producing an ascending ureteritis and pyelitis, which leads to graver kidney lesions if left uncared for. Now the question no doubt to you all is, how infection of the lower genito-urinary tracts, especially the prostate gland, seminal vesicles, ureter, rectum, vagina, and uterus invades the ureters and pelvis of the kidney. This has long been a question in the minds of eminent pathologists, as to the source of invasion, whether by continuity of surface, blood current, or by the lymphatics.

*Read before the California Academy of Medicine.

*Read before the Santa Clara Medical Society, Aug. 1906.